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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,439	08/14/2003	John H. Brophy	02-024	2458
34833	7590	07/09/2007		
FRANK ROSENBERG P.O. BOX 29230 SAN FRANCISCO, CA 94129-0230			EXAMINER MCDONOUGH, JAMES E	
			ART UNIT 1755	PAPER NUMBER
			MAIL DATE 07/09/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/642,439	Applicant(s) BROPHY ET AL.	
	Examiner James E. McDonough	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 5, 7-9, 11, 24, 28, 32, 34-43 and 45-78 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 5, 7-9, 11, 24, 28, 32, 34-43, and 45-78 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicants argument against the rejections in view of Brohpy et al., stating that since Brophy et al. is only eligible as 102(e) and was commonly owned at the time of the invention, that it does not constitute prior art, this is found persuasive, therefore the 103 rejections in view of Brophy et al. have been withdrawn. However, examiner would like to note that the Brophy et al. reference was not cited in any of the four IDS forms submitted.

New Rejections

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(2) Claims 1, 3, 5, 7-9, 11, 24, 28, 34-39, 41-42, and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haswell et al., Lab on a Chip, 2001, vol. 1, pp. 164-166 in view of Tonkovich et al. (USP 6,488,838).

(3) Although, Haswell et al. does not teach a microchannel with one wall that is adjacent to a heat transfer microchannel, Haswell et al. does teach using nickel and palladium (column 1, paragraph 1) with a Schiff base ligand that has oxo bridges and is chiral and tethered to a support (scheme1) wherein the support beads are porous (column 4, paragraph 6) and that heat transfer is improved in microreactors, but is silent as to how this heat transfer is achieved. However, because Tonkavich et al. teaches that when using microreactors with microchannels, a conventional way to achieve heat transfer is to arrange a heat transfer microchannel adjacent to a reactor microchannel (column 6, lines 36-38), it would have been prima facie obvious to someone of ordinary skill in the art at the time the invention was made to, modify the teachings of Haswell et al., by incorporating a heat transfer microchannel adjacent to a reactor microchannel to facilitate heat transfer, as suggested by Tonkovich et al.

(4) Claims 28, 32, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haswell et al., Lab on a Chip, 2001, vol. 1, pp. 164-166 in view of Tonkovich et al. (USP 6,488,838) as applied to claims 1, 3, 5, 7-9, 11, 24, 28, 34-39, 41-42, and 47 above, and further in view of Hoveyda et al. (US 2004/0019212).

(5) Although, Haswell et al. and Tonkovich et al. do not explicitly disclose a dendritic catalyst, they do teach the rest of the limitations of the instant claims. However, because Hoveyda et al. teaches the use of chiral organometallic/transition metal complex that can be in monomeric, polymeric, or dendritic form are stable and recyclable showing superior activity and stereoselectivity, it would have been obvious to

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someone of ordinary skill in the art at the time the invention was made to combine the teachings of Haswell et al., Tonkovich et al. and Hoveyda et al. with reasonable expectation of success and the expected benefit of catalyst reactors with high selectivity and stereoselectivity.

(6) Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haswell et al., Lab on a Chip, 2001, vol. 1, pp. 164-166 in view of Tonkovich et al. (USP 6,488,838) as applied to claims 1, 3, 5, 7-9, 11, 24, 28, 34-39, 41-42, and 47 above, and further in view of Kang (US Patent No. 3,993,855).

(7) Although, Haswell et al. and Tonkovich et al. do not explicitly disclose the specific Ni, Rh, or Ir catalyst, they do teach the rest of the limitations of the instant claims. However, because Kang teaches the use of $\text{RhH}(\text{CO}(\text{PPh}_3)_3)$ and that it provides selective hydrogenation (column 1, lines 41-45), it would have been obvious to someone of ordinary skill in the art at the time the invention was made to combine the teachings of Kang with that of Haswell et al. and Tonkovich et al. with a reasonable expectation of success and the expected benefit of forming a selective catalyst system.

(8) Claims 43, 45, and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haswell et al., Lab on a Chip, 2001, vol. 1, pp. 164-166 in view of Tonkovich et al. (USP 6,488,838) as applied to claims 1, 3, 5, 7-9, 11, 24, 28, 34-39, 41-42, and 47 above, and further in view of Chapman, Jr. et al. (US 2002/0182603).

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(9) Although, Haswell et al. and Tonkovich et al. do not explicitly disclose the chloro propyl silanes/amines, they do teach the rest of the limitations of the instant claims. However, because Chapman, Jr. et al. teaches the use of chloropropylsilane and amino propyl linkers that link a substrate with a support and that such substrate surfaces feature a uniform distribution of attachment functionality (abstract, scheme 1, and paragraph 0039), it would have been obvious to someone of ordinary skill in the art at the time the invention was made to combine the teachings of Chapman, Jr. with that of Haswell et al. and Tonkovich et al. with a reasonable expectation of success and the expected benefit of uniform distribution of catalyst moieties.

(10) Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haswell et al., Lab on a Chip, 2001, vol. 1, pp. 164-166 in view of Tonkovich et al. (USP 6,488,838) as applied to claims 1, 3, 5, 7-9, 11, 24, 28, 34-39, 41-42, and 47 above, and further in view of Ostoja-Starzewski et al. (US 2003/0036474).

(11) Although, Haswell et al. and Tonkovich et al. do not explicitly disclose the use of metallocene, they do teach the rest of the limitations of the instant claims. However, because Ostoja-Starzewski et al. teaches the use of tethered (linked) metallocenes and that these catalyst allow the formation of defect free polyethylene to a degree not achieved with conventional catalyst, it would have been obvious to someone of ordinary skill in the art at the time of the invention was made to combine the teachings of Ostoja-Starzewski et al. with that of Haswell et al. and Tonkovich et al. with

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a reasonable expectation of success and the expected benefit of forming a catalyst that can produce defect free polyethylene.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James E. McDonough whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JEM 7/4/2007


J. A. LORENCO
SUPERVISORY PATENT EXAMINER